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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,392	07/17/2006	Ulf Hagg	1515-1042	2551

466 7590 03/08/2011  
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209 Madison Street  
Suite 500  
Alexandria, VA 22314

EXAMINER
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WU, IVES J

ART UNIT	PAPER NUMBER
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1776

NOTIFICATION DATE	DELIVERY MODE
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03/08/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DocketingDept@young-thompson.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/586,392	<b>Applicant(s)</b> HAGG ET AL.	
	<b>Examiner</b> IVES WU	<b>Art Unit</b> 1797	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

(1). Applicants' Request-for-Continued Examination (RCEX), Amendments and Remarks filed on 5/12/2010 have been received.

Claims 4-5 are cancelled.

Claim 1 is amended.

The objection to the Specification, rejection of claims 4-5 in prior Office Action dated 1/13/2010 is withdrawn in view of the Remarks, Cancellation.

The rejection of claim 1 in prior Office Action dated 1/13/2010 is revised in response to the current Amendments.

### Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

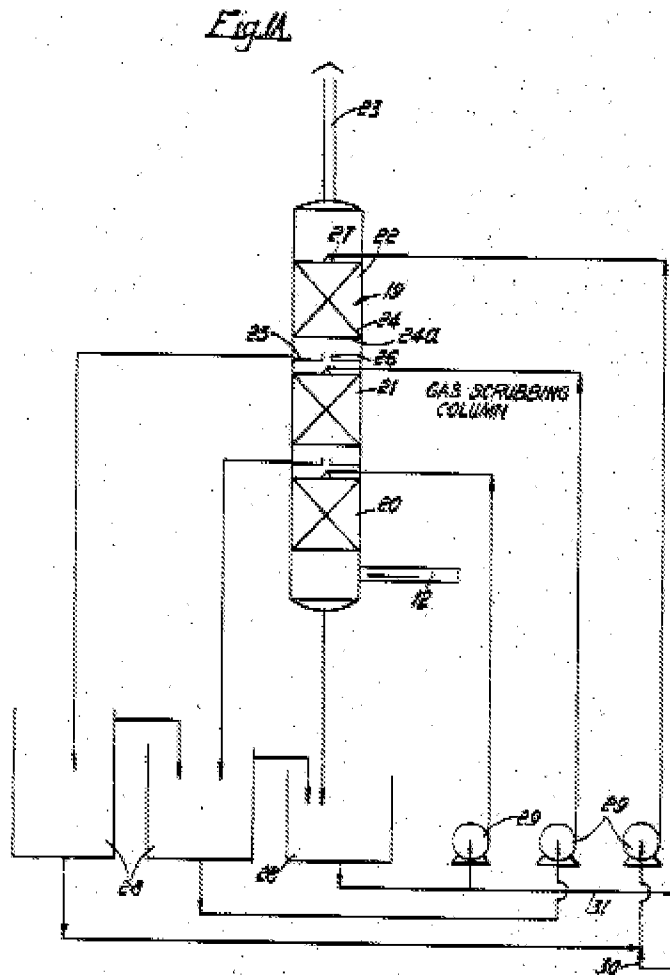
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(2). **Claims 1-3, 11-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Warner et al (US 3528220) in view of Nolan (US 6399030B1).

As to a scrubber for the cleaning of gases comprising: a scrubber tower; a plurality of scrubber stages (1-4), each arranged in the scrubber tower with different ones of the plurality of scrubber stages at different levels above each other in the scrubber tower in **independent claim 1**, Warner et al (US 3528220) disclose avoidance of air pollution in the manufacture of glass fiber products (Title). It is further shown in the Figure below, the gas scrubbing column has polluted air stream inlet 12, three scrubbing stages 20, 21 and 22 arranged as claimed.



As to wherein at least one of the plurality of scrubber stages (2-4) above a lowest one of said plurality of scrubber stages (1) comprises a ring-shaped fluid storage tank (10,15,20) arranged inside the scrubber tower and is arranged surrounding a central channel (9, 14, 20) through which the gas that is to be cleaned can pass upward in **independent claim 1**, as shown in the Figure above, the liquid collecting tray 25 (**storage tank**), and chimney riser 26 are read on the limitations as claimed.

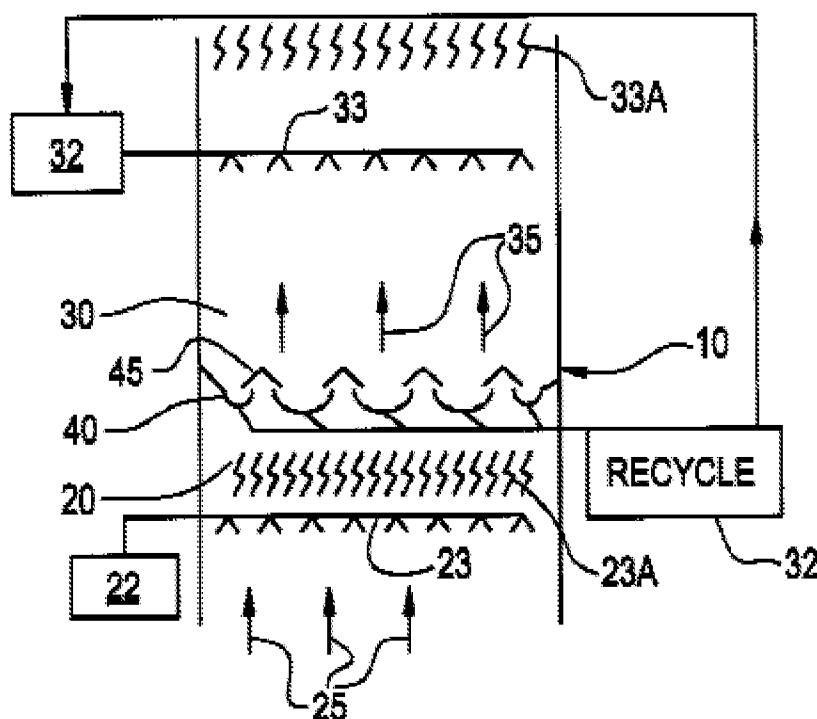
As to a separation trough at bottom of each of the plurality of stages of the scrubber above the lowest one of the plurality of scrubber stages and arranged separating the fluid from the upwards flowing gas, the separation trough having obliquely placed laminae leading the fluid that arrives from one of the plurality of scrubber stages disposed above the separation trough to

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trough channels arranged under the laminae, that lead the fluid onwards to the corresponding ring-shaped fluid tank in **independent claim 1**, Warner et al (US 3528220) disclose each zone containing Glitsch Grid packing 24 supported on a baffle plate 24a and has a liquid-collecting tray 25 at its base. Warner et al **do not teach** troughs as claimed.

However, Nolan (US 6399030B1) **teaches** combined flue gas desulfurization and carbon dioxide removal system (Title). As shown in the Figure 1 below, it contains a series of baffles and drains 40. One or both of the drains 40 and baffles 45 (**obliquely placed laminae**) may be oriented at an inclined angle toward a front or back of the wall of the vessel 10 to improve drainage of the 2<sup>nd</sup> reagent 32 from the vessel 10 for recycling (Col. 3, line 6-20).

# FIG. 1



The advantage of baffles and drains is to provide a simple, mechanical separator between the gas separation processes within the vessel (Col. 2, line 4-6).

Therefore it would have been obvious at time of the invention to install the baffles, drains of Nolan for the baffle plate for each scrubber stage in the vessel of Warner et al in order to attain the advantage cited above.

As to the separation trough is recessed within the surrounded by the ring-shaped fluid storage tank in **independent claim 1**, it would be within the space formed by wall of the column and liquid collection tray as the teaching of baffles, drainages disclosed by Nolan is combined.

As to wherein each of the plurality of scrubber stages (2-4) above the lowest of the plurality of scrubber stages comprises the ring-shaped fluid storage tank located inside of the scrubber tower in **claim 2**, as shown in the Figure above, it contains features as claimed.

As to further comprising a circulation pump at each of the plurality of scrubber stages and arranged to feed fluid through feed pipes present in the corresponding ring-shaped fluid storage tank from the corresponding ring-shaped fluid storage tank at the bottom of the scrubber stage to spray beams arranged at the upper part of the scrubber stage for distribution over the cross-section of the scrubber in a direction against the upwards gas flow in **claim 3**, as shown in the Figure above, the three circulation pump and spray 27 which reads on the limitations as claimed.

As to further comprising a circulation pump at each of the plurality of scrubber stages and arranged to feed fluid through feed pipes present in the corresponding ring-shaped storage tank from the corresponding ring-shaped fluid storage tank at the bottom of scrubber stage to spray beams arranged at upper part of the scrubber stage for distribution over the cross-section of the scrubber in a direction against the upwards gas flow in **claim 11**, as shown in the Figure above the liquid collecting tray 25 at bottom of the scrubber stage and spray 27 as well as the piping line (not numbered) to the spray 27, which read on the limitations as claimed.

As to wherein the circulation pump is connected to the corresponding ring-shaped fluid storage tank and located at essentially the same level as the corresponding ring-shaped fluid storage tank in **claims 12 and 13**, the disclosure of Warner et al is incorporated herein by reference, the most subject matters as currently claimed, has been recited in Applicants' claim 6, and has been discussed therein.

As to wherein the circulation pump is arranged on ground outside of the corresponding ring-shaped fluid storage tank and outside of the scrubber tower, and connected by means of an

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inlet pipe to a connector on the corresponding ring-shaped fluid storage tank in **claims 14 and 15**, the disclosure of Warner et al is incorporated herein by reference, the most subject matters as currently claimed, has been recited in Applicants' claim 9, and has been discussed therein.

(3). **Claims 6-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Warner et al (US 3528220) for the same rationale recited in prior Office Action dated 1/13/2010.

### **Response to Arguments**

(4). Applicant's arguments filed on 5/13/2010 have been fully considered but they are not persuasive.

Applicants assert that prior art Warner et al (US 3528220) and Nolan (US 6399030B1), whether taken individually or combined, fail to teach or suggest the relative positioning of a separation trough and a ring-shaped fluid storage tank such that the separation trough has "obliquely placed laminae leading the fluid that arrives from one of the plurality of scrubber stages disposed above the separation trough to trough channels arranged under the laminae to lead the fluid onwards to the corresponding ring-shaped fluid storage tank" and "separation is recessed within and surrounded by the ring-shaped fluid storage tank" as required by at least amended independent claim 1 (§2, page 9, Remarks). However, the teaching of baffles 45, drain conduit 40 in the figure 1 of Nolan (US 6399030B1) is combined with the teaching of packing of scrubber stage disclosed by Warner et al (US 3528220), in combining, the baffles, drain conduit of Nolan would be underneath the packing, its support baffle of scrubber stage of Warner et al, such that the advantage of baffles, conduits is achieved, also meet the instant claim. The recycle unit 32 disclosed by Nolan (US 3528220) as well as other issues raised by Applicants in this Remarks would not be persuasive because one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references, and the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skills in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

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### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IVES WU whose telephone number is (571)272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu

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Date: March 2, 2011

/Duane Smith/

Supervisory Patent Examiner, Art Unit 1776